PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
TINOCO.45.BR		
International application No.	International filing date (*day/month/year*)	Priority Date (*day/month/year*)
PCT/BR 2003/000002	10 January 2003 (10.01.2003)	15 January 2002 (15.01.2002)
International Patent Classification (IPC) or national classification and IPC		
IPC^7: F16K 3/02, 3/20, F16J 15/52		
Applicant		
WEIR DO BRASIL LTDA.		

1. This international preliminary examination report has been prepared by this International Preliminary Examination Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

   - I. ☒ Basis of the opinion
   - II. ☐ Priority
   - III. ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV. ☐ Lack of unity of invention
   - V. ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI. ☐ Certain documents cited
   - VII. ☒ Certain defects in the international application
   - VIII. ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
18.08.2003	12 May 2004 (12.05.2004)
Name and mailing address of the IPEA/AT Austrian Patent Office Dresdner Straße 87 A-1200 Vienna Facsimile No. 1/53424/200	Authorized officer EHRENDORFER K. Telephone No. 1/53424/367

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/BR 03/00002-0

I. Basis of the report

1. With regard to the **elements** of the international application:*

☐ the international application as originally filed

☒ the description:
pages 1/7-7/7, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____.

☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement) under Article 19
pages _____, filed with the demand
pages 1/2,2/2, filed with the letter of 30 April 2004 (30.04.2004).

☒ the drawings:
pages 1/4-4/4, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____.

☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____.

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____.

☐ the claims, Nos. _____.

☐ the drawings, sheets/fig _____.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

** Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as „originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

*** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-6	YES
	Claims	----	NO
Inventive step (IS)	Claims	4-6	YES
	Claims	1-3	NO
Industrial applicability (IA)	Claims	1-6	YES
	Claims	----	NO

Citations and explanations (Rule 70.7)

The following documents have been cited in the Search Report:

D1: US 5271426 A
D2: US 4527773 A
D3: US 3333816 A
D4: JP 11 063249 A
D5: US 4693447 A
D6: GB 2091845 A
D7: US 5150881 A

Subject matter of amended claim 1 is a guillotine valve with sealing elements (7), which are hollow in their entire construction circumference, watertight, filled with air and produced of an elastomer. None of the documents cited discloses all features of claim 1. Since the other claims are dependent claims, subject matter of all claims are considered new.

In document D1 a sealing element for a guillotine valve with closing blade 14 and actuator 12, see D1, fig. 1, 3, is described, which contains annular seals 54, 55 made of resilient elastomer with compression holes 40 sealed with plugs 83, see document D1, fig. 3, description column 4 lines 13-22, column 5 lines 29-32.

Document D6 describes a similar valve, which has tube shaped seal elements 40, which are pressed against the valve blade 23 by pressurizing actuating means 41, see document D6, description page 1 lines 50-63, Fig. 2. Therefore from document D6 the design of seal elements 40 in the form of circumferential, tight chambers entirely filled with air ("tubular design") is known. It poses no problem for a person skilled in the art to choose one of the described designs for his sealing elements, namely either the "compression hole design" described in D1 or the "tubular design" described in D6. If the expert chooses the "tubular design" within a valve described in D1, subject matter of

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V (page 1)

claim 1 is realized, which is why subject matter of claim 1 cannot be considered inventive, if documents D1 and D6 are taken into account.

Similar valves with tubular sealing elements are described in documents D2 [see fig. 3, elastic seals 5, 6, column 5 lines 3-24] and D4 [see fig. 1,annular air chambers 26, which are pressurized for sealing purposes].

The feature according to amended claim 2, namely a convex contour of the hose sections on their internal faces, which are apparently the sides of the seals facing each other, is met by documents D1-D6 and therefore cannot be considered inventive, considering documents D1 and D6.

Amended claim 3 only describes a physical phenomenon, namely the radial compression of the seals due to line pressure which leads to higher axial pressure of the seals on the valve blade. This effect, of course, takes place with any similar sealing elements, for example with seals 54, 55 described in D1. Since claim 3 contains no technical feature it moreover does not comply with rule 6.3 lit. a. Since claim 3 adds no further features to subject matter of claim 2 (which cannot be considered inventive), subject matter of claim 3 cannot be considered inventive as well.

It is known from document D3 to use T-shaped reinforcement elements inside the seal of a guillotine valve, see document D3, fig. 4, 4A, description column 3 lines 27-45, compare with amended claim 4, and to contain an additional sealing system, see document D3, fig. 1, description column 2 lines 56-59, compare with amended claim 6. To prevent excessive contact pressures between the blade and the reinforced seal, the seal contains recesses or pockets 111, see document D3, fig. 4, 4A, description column 3 line 56- column 4 line 5. However, all features of subject matters of amended claims 4 and 6 are covered only if at least documents D1, D6 and D3 are taken into account, which is why subject matters of amended claims 4 and 6 are considered inventive.

No document cited describes sliding rings according to amended claim 5, which is why subject matter of amended claim 5 is considered inventive.

Industrial applicability is given.